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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/825,183

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David S. Christie

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EXAMINER

LI, AIMEE J

ART UNIT

PAPER NUMBER

2183

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/825,183	<b>Applicant(s)</b> CHRISTIE ET AL.	
	<b>Examiner</b> Aimee J Li	<b>Art Unit</b> 2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2004 and 01 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 61-80 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 61-80 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

1. New claims 61-80 have been considered. Claims 31-60 have been cancelled as per Applicant's request

#### ***Papers Submitted***

2. It is hereby acknowledged that the following papers have been received and placed on record in the file: After Final Amendment as received on 24 September 2004 and RCE as received in 01 November 2004.

#### ***Drawings***

3. The drawings are objected to because in Figure 2, the numbering the examiner believes denotes bits is unclear. Specifically, the alignment of the "15", "16", and "31" is confusing. For example, due to the vertical alignment of "31", it could be mistaken to be a label of "1" or "3" instead of bit position "31". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 61-72 are rejected under 35 U.S.C. 102(b) as being taught by Baum, U.S. Patent Number 5,303,358 (herein referred to as Baum).

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6. Referring to claims 61 and 65, taking claim 65 as exemplary, Baum has taught a processor comprising:

- a. A register file including a plurality of registers (Baum column 3, lines 38-44); and
- b. An execution core coupled to the register file (Baum column 3, lines 36-38 and column 4, lines 35-50). In regards to Baum, it is inherent that there is an execution core, since the instructions, such as the Add instruction, are executed and produce results.
- c. Wherein the execution core is configured to:
  - i. Use a value of a register address field of an instruction to select a least significant portion of one of the plurality of registers responsive to detecting a prefix field in the instruction (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C), wherein each value encodable in the register address field results in a selection of the least significant portion of a respective one of the plurality of registers (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C); and
  - ii. Use the value of the register address field to select one of either a least significant portion or a second least significant portion of one of a subset of the plurality of registers responsive to detecting a lack of a prefix field in the instruction (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C), wherein the

subset excludes at least one of the plurality of registers (Baum column 5, lines 5-19 and 31-41 and Figure 3).

7. Claim 65 is nearly identical to claim 61. Claim 65 differs in that it is an apparatus, but claim 65 encompasses the same scope as claim 61. Therefore, claim 65 is rejected for the same reasons as claim 61.

8. Referring to claim 69, Baum has taught a method comprising:

- a. Responsive to detecting a prefix field in an instruction that also includes a register address field (Baum column 5, lines 6-19 and 31-41 and Figure 3), selecting a least significant portion of one of a plurality of registers dependent on a value of the register address field (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C), wherein each value encodable in the register address field maps to a different one of the plurality of registers (Baum column 5, lines 6-19 and 31-41 and Figure 3); and
- b. Responsive to detecting a lack of the prefix field in the instruction, selecting either a least significant portion or a second least significant portion of one of a subset of the plurality of registers dependent on the value of the register address field (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C), wherein the subset excludes at least one of the plurality of registers (Baum column 5, lines 5-19 and 31-41 and Figure 3).

9. Referring to claims 62, 66, and 70, Baum has taught wherein the prefix field is a prefix byte (Baum column 1, line 66 to column 2, line 6; column 3, lines 57-59; column 5, lines 31-41; column 6, lines 21-29; and Figure 3). In regards to Baum, the size of the prefix is not directly

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stated, however, the exact size of the prefix does not matter, just that the function is similar to that which is claimed (*In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955)).

10. Referring to claims 63, 67, and 71, Baum has taught wherein the instruction specifies a one byte operand size (Baum column 3, line 67 to column 4, line 15 and Figure 2C).

11. Referring to claims 64, 68, and 72, Baum has taught wherein the least significant portion and the second least significant portion are each a byte (Baum column 3, line 67 to column 4, line 15 and Figure 2C).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 73-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baum, U.S. Patent Number 5,303,358 (herein referred to as Baum) in view of Gulick et al., U.S. Patent Number 5,732,224 (herein referred to as Gulick).

14. Referring to claim 73, Baum has taught a processor comprising:

- a. A register file including a plurality of registers (Baum column 3, lines 38-44); and
- b. Wherein the processor is configured to:
  - i. Use a value of a register address field of an instruction to select a least significant portion of one of the plurality of registers responsive to detecting a prefix field in the instruction (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and

Figure 2C), wherein each value encodable in the register address field results in a selection of the least significant portion of a respective one of the plurality of registers (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C); and

- ii. Use the value of the register address field to select one of either a least significant portion or a second least significant portion of one of a subset of the plurality of registers responsive to detecting a lack of a prefix field in the instruction (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C), wherein the subset excludes at least one of the plurality of registers (Baum column 5, lines 5-19 and 31-41 and Figure 3).

15. Baum has not taught a peripheral device configured to communicate between the computer system and another computer system. However, Gulick has taught that conventional computer systems contain a processor, as well as various peripherals coupled to the processor, such as network interface cards, modems and audio devices (see Gulick, Col.1 lines 17-34), so that the systems' functionality can be expanded to include real-time applications (see Gulick, Col.1 lines 35-45). Because it is desirable for a microprocessor to have its functionality expanded by incorporating it into a system, and further because such an expansion is conventionally performed, one of ordinary skill in the art would have found it obvious to modify the processing system of Turley to include multiple peripheral devices such as a NIC, modem, or audio device, so that the system's functionality can be enhanced per conventional techniques.

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16. Referring to claim 74, Baum has taught wherein the prefix field is a prefix byte (Baum column 1, line 66 to column 2, line 6; column 3, lines 57-59; column 5, lines 31-41; column 6, lines 21-29; and Figure 3). In regards to Baum, the size of the prefix is not directly stated, however, the exact size of the prefix does not matter, just that the function is similar to that which is claimed (*In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955)).

17. Referring to claim 75, Baum has taught wherein the instruction specifies a one byte operand size (Baum column 3, line 67 to column 4, line 15 and Figure 2C).

18. Referring to claim 76, Baum has taught wherein the least significant portion and the second least significant portion are each a byte (Baum column 3, line 67 to column 4, line 15 and Figure 2C).

19. Referring to claims 77, 78, and 80, Baum has not taught

- a. Wherein the peripheral device comprises a modem (Applicant's claim 77);
- b. Wherein the peripheral device comprises a network interface device (Applicant's claim 78); and
- c. An audio device (Applicant's claim 80).

20. However, Gulick has taught that conventional computer systems contain a processor, as well as various peripherals coupled to the processor, such as network interface cards, modems and audio devices (see Gulick, Col.1 lines 17-34), so that the systems' functionality can be expanded to include real-time applications (see Gulick, Col.1 lines 35-45). Because it is desirable for a microprocessor to have its functionality expanded by incorporating it into a system, and further because such an expansion is conventionally performed, one of ordinary skill in the art would have found it obvious to modify the processing system of Turley to include

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multiple peripheral devices such as a NIC, modem, or audio device, so that the system's functionality can be enhanced per conventional techniques.

21. Referring to claim 79, Baum has taught a second processor (Baum column 3, lines 24-26 and 36-38 and Figure 1) comprising:

- a. A register file including a plurality of registers (Baum column 3, lines 38-44); and
- b. Wherein the second the processor is configured to:
  - i. Use a value of a register address field of an instruction to select a least significant portion of one of the plurality of registers responsive to detecting a prefix field in the instruction (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C), wherein each value encodable in the register address field results in a selection of the least significant portion of a respective one of the plurality of registers (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C); and
  - ii. Use the value of the register address field to select one of either a least significant portion or a second least significant portion of one of a subset of the plurality of registers responsive to detecting a lack of a prefix field in the instruction (Baum column 1, line 66 to column 2, line 6; column 3, line 67 to column 4, line 15; Figure 2B; and Figure 2C), wherein the subset excludes at least one of the plurality of registers (Baum column 5, lines 5-19 and 31-41 and Figure 3).

***Response to Arguments***

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22. Examiner withdraws drawing objection in favor of the drawing amendments.

23. Applicant's arguments with respect to claims 61-80 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

- a. Dutton et al., U.S. Patent Numbers 5,680,578 and 5,822,778, have taught an instruction prefix that expands the register set, i.e. indicates extra accessible registers, when present.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aimee J Li whose telephone number is (571) 272-4169. The examiner can normally be reached on M-T 7:30am-5:00pm.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJL

Aimee J. Li

10 January 2005



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